**CLAIMS**

1) Method for reconstructing a radiographic image of an object crossed by a diverging radiation undergoing an attenuation, the radiation occupying successive positions (4) having overlapping portions and the attenuation being measured by a network (3) of detectors (10), on which the radiation projects and giving vignettes of the image respectively associated with the positions of the radiation and also comprising overlapping portions, the method comprising a combination of vignettes for reconstructing the image, as well as the following steps :

- discretising the object into voxels (8) defining reconstruction heights (11),

- associating the voxels with at least one detector respective of the network on which the radiation projects after having crossed said volume,

- allocating an attenuation value to each voxel according to the values measured by said associated detector,

- and combining the attenuation values of the voxels at the different reconstruction heights to obtain a two dimensional image.

2) Method for reconstructing a radiographic image according to claim 1, characterised in that the attenuation value attributed to each volume is equal to the sum of the values measured by said associated detector, divided by the number of vignettes that contribute to giving said associated detector, and the attenuation values of the voxels are combined by a digital combination on the groups (12) of voxels superimposed at the different reconstruction heights.

3) Method for reconstructing a radiographic image according to claim 1, characterised in that the attenuation

value attributed to each voxel is obtained by iterative projection of attenuation values measured by the detectors (10), provisional values being allocated to the voxels and corrected after having been projected on the detectors, in calculating the differences between the sums of provisional values on the projection lines and the values measured by the detectors on said projection lines, and by projecting the differences on said projection lines to correct the provisional values.

4) Method for reconstructing a radiographic image according to claim 2 or 3, characterised in that the attenuation values of the volumes are digitally combined on the groups (12) of volumes superimposed at the different reconstruction heights.

5) Method for reconstructing a radiographic image according to any of the previous claims, characterised in that it is applied to osteodensitometry.